REMARKS

Claims 1–24 are pending. No claims have been amended in this paper.

Claim Rejections Under 35 U.S.C. § 103

A *prima facie* rejection for obviousness requires: (1) a disclosure or suggestion of every element of the claim in the cited reference or references; (2) a suggestion or motivation, in the references or known to one skilled in the art, to modify or combine the references; and (3) a reasonable expectation of success. The suggestion to combine and the reasonable expectation of success must be found in the cited references. *In re* Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991).

Claim Rejections over Scheer and Ballas.

Claims 1–2, 7–10, 14–21, and 24 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Scheer (U.S. Patent No. 5,194,297) in view of Ballas (U.S. Patent No. 4,812,396). Applicant submits that claims 1–2, 7–10, 14–21, and 24 are not obvious over Scheer and Ballas because the cited references do not disclose or suggest every element recited in the claims.

Scheer is directed to "controlled deposition of small particles onto surfaces." Scheer at 3:12–14. Turning to FIG. **1**, a deposition apparatus includes a nozzle **21** (ref. no. **21** is refers to both a nozzle and a laser source) that generates a mist of particles **13**. Scheer at 3:37–40. The particles **13** are solid, an oily material, a liquid monomer, or a salt solution. Scheer at 3:37–40, 3:42–44. The particles **13** are deposited on the surface of an article **19**. Scheer at 3:67–4:3. The apparatus comprises a laser-based, airborne particle counter comprising a laser source **21** and detector array **25**, which is positioned to detect obscuration or scattering of light by particles. Scheer 4:10–24. The particle counter continuously samples the chamber atmosphere though an inlet **20**, positioned beneath a substrate location **19***d*. Scheer 4:13–19. The particle counter measures the flux of particles **13** falling through the chamber.

Ballas is directed "to particle agglutination based diagnostic method for detecting enzymatic activity in liquid test samples." Ballas at 1:12–14. The agglutination system comprises highly refractive particles with a ligand conjugated thereto; a binding partner specific to the ligand, and capable of binding at least two ligands; and a substrate for an enzyme, where the product of the enzyme and substrate competes with the ligand for the binding partner. Ballas at 2:50–64. The assay uses agglutination, which is an aggregation or clumping together of, in this

case, the highly refractive particles. Agglutination is not polymerization. Ballas also includes a method for manufacturing the highly refractive particles used in the agglutination system by polymerization. Ballas at 4:62–5:32. This manufacturing system is completely independent of the enzyme assay.

Independent claim 1 is directed to a "method for detecting a particle on a substrate." The Examiner states that Scheer discloses a method for detecting a particle on a substrate. The Examiner refers to column 4, lines 10–25 as disclosing detecting particles on a substrate. The cited portion, however, actually discloses detecting ***airborne*** particles, not particles on a substrate. Set forth below is column 4, lines 10–34 (emphases added):

> The system also includes a laser-based, *airborne particle counter*, essentially comprising a laser source **21** producing a collimated light beam **23**, and a light detector or detector array **25**. In a preferred configuration, the particle counter continually *samples the atmosphere within the chamber* through an inlet **20** beneath the substrate location **19***d*, using a collimated light source **21**, such as a laser, and a light detector or detector array **25**, to *provide a measure of particles per unit volume per unit time*. The detector **25** is placed in a location relative to the beam **23** to detect either the obscuration of the beam **23** by each particle **13** that crosses through the beam's path or, preferably, the scattering of the light off of the illuminated particles **13** (at location **25'** in FIG. **2**). In either case, *the result is to provide a particle count representative of the flux of the particles 13 falling through the deposition chamber 15*. Such volume sampling particle counters are commercially available from TSI, Inc., Particle Measuring Systems, Inc. of Boulder, Colo. and other vendors. Typical steady state flux values provided by the atomizer **11**, as measured by the particle counter, range from **10** particles/0.1 cfm for large particles of about 4 μm diameter to about 500,000 particles/0.1 cfm for small particles of about 0.1 μm diameter. (0.1 cfm = 47.195 cm^3 sec^{-1}).

Accordingly, the Examiner's own cited passage from Scheer discloses an "*airborne particle counter*" that samples the "*samples the atmosphere within the chamber*" to "*to provide a particle count representative of the flux of the particles 13 falling through the deposition chamber 15.*" Nowhere does the cited passage disclose or suggest detecting a particle on a substrate.

The Examiner also relies on FIG. **1**, referring to the laser source **21**, detector array **25**, and substrate **19***d* illustrated therein (the substrate is actually **19**; **19***d* refers to a substrate location). As discussed above, FIG. **1** illustrates a laser source **21** and a detector array **25** disposed in a housing disposed in the lower right corner of a chamber, which together are components of an airborne particle counter. Airborne particles **13** enter the airborne particle counter through inlet

20, which is interposed between the laser source 21 and detector array 25. Airborne particles 13 are detected in the inlet 20. The substrate location 19*d* is above-and-left of the airborne particle counter and not within the housing. The substrate 19 is not interposed between the laser source 21 and detector array 25. The laser source 21 is not positioned to illuminate the substrate 19. The detector array 25 is not positioned to detect any property of the substrate 19. Scheer does not disclose or suggest that the airborne particle counter interacts in any way with the substrate 19. Consequently, the apparatus illustrated in FIG. 1 does not disclose or suggest detecting a particle 13 on the substrate 19.

The Examiner also refers to FIGS. 3A–3C in the Office Action as relevant to detecting a particle on a substrate. The entirety of the description of these figures is at column 5, line, 28 through column 6, line 5, and at column 7, lines 43–61, which describe possible surface deposition patterns for particles on a substrate. Although these drawings depict particles (53, 57, 65, or 67) on a substrate (51, 55, or 63), nothing in this portion of Scheer discloses or suggests detecting a particle on a substrate. Because the Examiner has not met his burden of showing that Scheer discloses or suggests detecting a particle on a substrate, claim 1 is not obvious over the cited combination for at least this reason.

Claim 1 further recites that "the particle catalyzes the polymerization of the monomer." According to the Examiner, Ballas discloses a method for detecting enzymatic activity using a particle by a method comprising particle-catalyzed polymerization of a monomer. The Examiner is mistaken. Ballas does not disclose or suggest a particle-catalyzed polymerization of a monomer. In support of this contention, the Examiner cites to column 5, lines 15–32. In order to provide the appropriate context, column 4, line 62 through column 5, line 32 are set forth below:

> Suitable highly refractive particles can be made from, for example, agarose, polydextran, polyacrylamide and polymeric latexes. Particle shape is not critical, although spherical particles are preferred because they are easiest to prepare and provide maximum lattice density in the agglutinated state. Particle size is somewhat critical. Preferred diameter for spherical particles is from about 30 nm to 100 nm for the agglutination inhibition mode. The most preferred particle is that described in U.S. Pat. No. 4,401,765, issued to Craig et al. on Aug. 30, 1983 on an application filed Oct. 28, 1981. The disclosure of this patent is incorporated herein by reference. These particles have a highly refractive spherical polymer core preferably made of polyvinylnaphthalene and polystyrene. The core has disposed on its surface a reactive shell to which antigens, haptens, etc., can be covalently coupled. A convenient way to control particle size of the polymer

> particles is first to prepare a seed emulsion whose size can be controlled by the amount of surfactant used. After preparation of the seed emulsion, additional monomer and surfactant can be added at a controlled rate to increase the size of the particles in the seed emulsion.
>
> The outer shell polymer of the polymer particle can be prepared from a wide range of ethylenically unsaturated monomers having functional groups capable of reacting with compounds of biological interest. Optionally, the outer shell can also contain other ethylenically unsaturated monomers. The attachment of the shell polymer to the core can be accomplished by graft polymerization of the functional monomer to the residual ethylenically unsaturated groups in the core polymer or the functional monomer can be polymerized around the core to produce a contiguous shell. Preferred monomers include those containing an epoxy group such as glycidyl methacrylate, glycidyl acrylate, vinyl glycidyl ether, and methallyl glycidyl ether. Other functional groups include carboxyl, hydroxyl, amino, and aldehyde.

The cited portion of the specification discusses the manufacture of refractive polymer particles. The particles are useful for the disclosed enzyme assay, in which the disclosed particles agglutinate in the presence of a target enzyme. The manufacturing process disclosed in the cited portion is not related to the enzyme assay itself.

The end of the first paragraph (col. 5, ll. 10–16) discusses the manufacture of cores for the refractive polymer particles by emulsion polymerization. This portion of the specification does not disclose or suggest a particle-catalyzed polymerization reaction. In fact, at the start of the polymerization, there are no particles at all. Emulsion polymerization is carried out using an emulsion of immiscible liquids, one of which is or comprises a monomer. For example, EXAMPLE 1, part C discloses the manufacture of polystyrene cores by emulsion polymerization of a styrene-in-water/SDS emulsion, using potassium persulfate/ferrous sulfate as a polymerization initiator. The polymerization reaction was not catalyzed by the cores.

The beginning of the next paragraph (col. 5, ll. 17–32) discusses the formation of an outer shell over the core. The outer shell is attached to the core either by graft polymerization to the core or by polymerization of a monomer around the core. This portion of the specification also does not disclose or suggest that the core catalyzes a polymerization reaction. Returning to EXAMPLE 1, part C, a polyvinylnaphthalene intermediate layer was formed on the polystyrene core using a polyvinylnaphthalene-in-water/SDS emulsion and a potassium persulfate initiator. The polymerization was not catalyzed by the cores. Finally, a polyglycidyl methacrylate outer

shell was formed on the polystyrene/polyvinylnaphthalene cores using a glycidyl methacrylate-in-water/SDS emulsion and a potassium persulfate initiator. Again, the polymerization was not catalyzed by the cores. In conclusion, neither the cited portion of Ballas or any other portion of Ballas discloses or suggests a particle-catalyzed polymerization of a monomer. Because the combination of Scheer and Ballas does not disclose or suggest every feature recited in claim 1, claim 1 is not obvious over the cited references for at least this reason.

The Examiner states that it would have been obvious to combine the method of detecting a particle on a substrate of Scheer with the particle catalyzed polymerization of Ballas in order to accurately detect an enzyme on a substrate with optimum sensitivity and high speed. As discussed above, the cited portion of Ballas has nothing to do with the enzyme assay itself. Accordingly, the Examiner's motivation is erroneous and should be withdrawn for at least this reason.

Furthermore, as discussed above, Scheer does not disclose or suggest detecting a particle on a substrate. Also as discussed above, Ballas does not disclose or suggest particle-catalyzed polymerization. Because the alleged motivation is facially erroneous, claim 1 is not obvious over the cited references for at least this reason.

Furthermore, in a proper motivation to combine, the cited references must suggest the desirability of the *claimed subject matter. See, for example,* M.P.E.P. 2143.01(I). In this rejection, as well as in others discussed below, the Examiner's purported motivation has no connection whatsoever with the claimed subject matter. Claim 1 is directed to a method for detecting a particle on a surface. The alleged motivation is the detection of an enzyme on a surface with optimum sensitivity and speed. Accordingly, the Examiner's motivation to combine is legally insufficient and the rejection should be withdrawn.

Moreover, the Examiner has provided no evidence for the purported advantages of combining the references: optimum sensitivity and high speed. Referring to EXAMPLE 2, part E and TABLE 4, the disclosed assay is 100 times more sensitive than the prior art method and takes 3 minutes. The Examiner has simply provided no evidence, either in the prior art or known to one skilled in the art, that even if the references were in some way combinable, that the alleged advantages would result in the asserted combination. Accordingly, because the Examiner's

motivation to combine is deficient, claim 1 is not obvious over the cited references for at least this reason.

Furthermore, the enzyme assay of Ballas is not conducted ***on a substrate,*** it is conducted in a liquid sample. *See, for example*, Ballas at Abstract ("A method is disclosed for *determining enzymatic activity in a liquid sample* by particle agglutination or inhibition of particle agglutination."); 1:13–15 ("This invention relates to particle agglutination based diagnostic methods for *detecting enzymatic activity in liquid test samples*."); 2:50–52 ("This need is met by the present invention which, in a first aspect is *an agglutination based method for detecting an enzyme in a liquid test sample*, comprising:"); 3:6–8 ("In another aspect, the present invention is *an agglutination based method for detecting an enzyme in a liquid test sample*, comprising:"). Moreover, the Examiner has pointed to no disclosure in either Scheer or Ballas that the emulsion polymerization of Ballas or the enzyme assay ***in a liquid*** is compatible with the ***airborne*** particle detection of Scheer. Accordingly, the Examiner has made no showing of a reasonable expectation of success, and claim 1 is not obvious over the combination for at least this reason.

Furthermore, Ballas is also not analogous art. "In order to rely on a reference as a basis for rejection of an applicant's invention, the reference must either be in the field of applicant's endeavor or, if not, then be reasonably pertinent to the particular problem with which the inventor was concerned." *In re Oetiker*, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992); M.P.E.P. 2141.01(a).

Ballas is not in the same field of endeavor as the pending claims. Claim 1 is directed to a method for detecting a particle on a substrate "used in the fabrication of an integrated device." Ballas discloses biological assay: a method for detecting enzymatic activity. Biological assays are not in the field of fabrication of an integrated device. The Examiner has not argued otherwise.

Ballas is also not pertinent to the particular problem with which the inventor was concerned. Particle contamination in the manufacture of integrated devices is among the problems identified in the present application. Specification at ¶ **[0002]** ("Particulate contaminants are undesirable in the fabrication of integrated devices."). Ballas, on the other hand, is directed to an enzyme assay. As discussed above, Ballas does not disclose or suggest detecting a particle on a substrate. Accordingly, Ballas is not pertinent to the manufacture of integrated

devices, and is not analogous art. Consequently, claim 1 is patentable over the cited references for at least this reason.

The Examiner argues that "the substrate is used in the fabrication of an integrated device" is an intended use. The Examiner's explanation that "If the prior art structure is capable of performing the intended use, then it meets the claim," reveals that problem with this position: it applies to apparatus claims. The present claims are method claims. Accordingly, the Examiner must accord patentable weight to "the substrate is used in the fabrication of an integrated device." Moreover, there is no indication anywhere in the references that "the prior art structure ***is capable*** of performing the intended use."

Because claims 2, 7–10, 14–21, and 24 are dependent on claim 1 and recite additional features, these claims are also not obvious over Scheer and Ballas for at least the same reasons.

Regarding claims 7–8, the Examiner states that Ballas teaches identifying a particle by a polymerization rate of a monomer, referring to column 5, lines 5–32, and TABLES 1 and 2. As discussed above, column 5, lines 5–32 describe the manufacture of polymer particles used in an enzyme assay. Also as discussed above, column 5, lines 5–32 do not disclose particle-catalyzed polymerization. Furthermore, nothing in column 5, lines 5–32 discusses polymerization rates, or the identification of a particle by polymerization rate. TABLE 1 discloses agglutination rates in an enzyme assay. Agglutination is not polymerization. For example, TABLE I does not disclose a monomer or a resulting polymer. Also, nothing in TABLE 1 indicates that the agglutination rate changes with particle type. TABLE 2 discloses exemplary enzyme, substrate, and ligand binding partner systems, all of which are agglutination, not polymerization systems. TABLE 2 does not disclose polymerization. TABLE 2 does not disclose rates. TABLE 2 does not disclose different particle types, or the identification of the same. Because the cited combination does not disclose or suggest the additional features recited in claims 7–8, and claims 7–8 are not obvious over these references for at least this reason.

Regarding claims 9–10, the Examiner states that Ballas teaches a monomer that is polymerized by a plurality of particle types, and repeating the contacting and detection steps, again referring to column 5, lines 5–8 and TABLES 1 and 2. As discussed above, Ballas does not disclose a particle that catalyzes polymerization, and accordingly, cannot disclose a monomer that is polymerized by a plurality of particle types. As discussed above, TABLES 1 and 2 are

related to agglutination, not polymerization. Ballas also does not disclose repeated detection steps, either in the enzyme assay, or in the manufacture of the refractive particles. Because the cited combination does not disclose or suggest the additional features recited in claims 9–10, and claims 9–10 are not obvious over these references for at least this reason. The Examiner further states that one would have been motivated to combine Ballas with Scheer because direct agglutination is easier to detect than agglutination inhibition. Again, whether direct agglutination is easier to detect than agglutination inhibition is irrelevant to the patentability of claims 9–10 because the claims are directed to polymerization, not agglutination, and because the cited portions of Ballas are directed to manufacture of refractive particles, not agglutination. Because the cited combination does not a proper motivation to combine, and claims 9–10 are not obvious over these references for at least this reason.

Regarding claims 14–15, the Examiner states that Scheer discloses an aluminum particle and that it would have been obvious to replace the aluminum particle with a copper particle as an obvious design choice. The Examiner cites *In re Leshin* as supporting this rejection. In *In re Leshin*, the court held that selecting a known plastic to make a container of a type made of plastics prior to the invention was obvious. In the present case, the Examiner has produced no evidence either that aluminum particles catalyze the polymerization of any monomers or it is known that copper and aluminum catalyze the polymerization of the same monomers. Accordingly, *In re Leshin* is inapposite to the present facts, and claims 14–15 are not obvious over the cited references for at least this reason. Moreover, even if such evidence was of record, the asserted combination of references still lacks recognition of the advantages of the claimed combination with respect to particle detection on a surface.

Regarding claims 17 and 24, the Examiner states that Scheer discloses a single crystal silicon substrate, as well as exposure to an electromagnetic radiation or laser source. Scheer does not appear to disclose a single crystal silicon substrate or exposure to a source of electromagnetic radiation, or laser source, for that matter. Because the cited combination does not disclose or suggest the additional features recited in claims 17 or 24, and claims 17 and 24 are not obvious over these references for at least this reason.

Regarding claim 18, the Examiner states that Scheer discloses a vapor phase monomer, referring to reference numbers **11, 12, 16, 18,** and **21,** of FIG. **1.** The sole disclosure of a

monomer is to a "liquid monomer." Scheer at 3:44. Scheer does not disclose a vapor phase monomer.

Scheer discloses that "This system includes an atomizer **11** for discharging *a fine mist of particles* **13** into a deposition chamber **15**." Scheer at 3:14–16. Accordingly, the atomizer **11** discharges a fine mist of particles, and provides no support for the Examiner's alleged disclosure of a vapor phase monomer.

Scheer discloses that "Typically, *the particles are solid particles* carried in suspension in a liquid, such as deionized water or isopropyl alcohol, from a supply vessel **12** to an aerosol generator **14** that sprays the liquid suspension as very fine droplets into an aerosol drying chamber." Scheer at 3:24–28. Accordingly, the supply vessel **12** stores a suspension of solid particles, and provides no support for the Examiner's alleged disclosure of a vapor phase monomer.

Scheer discloses that "If the drying chamber **16** has a large internal surface area, *very low particle densities* are possible." Scheer at 3:28–30. Accordingly, the drying chamber **16** dries solid particles, and provides no support for the Examiner's alleged disclosure of a vapor phase monomer.

Scheer discloses that "*The solid particles*, now dry through evaporation of the liquid carrier medium, are made electrically charge neutral by conditioning them in a conditioner **18** with a beta-emitter, such as Kr-85, in order to keep the particles from being electrostatically attracted to one another and sticking to one another." Scheer at 3:30–36. Accordingly, the conditioner **18** is used on solid particles, and provides no support for the Examiner's alleged disclosure of a vapor phase monomer.

Scheer discloses that "The *particles* are discharged from a nozzle **21** into the chamber **15**, *the resulting mist is made up of separate dry solid particles* suspended in a gaseous stream." Scheer at 3:37–40. Accordingly, the nozzle **21** generates a mist of separate dry solid particles, and provides no support for the Examiner's alleged disclosure of a vapor phase monomer. Because the cited combination does not disclose or suggest the additional feanures recited in claim 18, and claim 18 is not obvious over these references for at least this reason.

Regarding claims 19–20, the Examiner states that Ballas teaches alkenes selected from styrene, methyl acrylate, ethyl acrylate, methyl methacrylate, and acrylonitrile for adding material

at a controlled rate to increase the size of the particles in the seed emulsion. Ballas does not appear to disclose methyl acrylate, ethyl acrylate, methyl methacrylate, or acrylonitrile in any context. Ballas does not appear to disclose that any particular alkene, including styrene, methyl acrylate, ethyl acrylate, methyl methacrylate, or acrylonitrile, has any particular advantage in forming a seed emulsion. Claims 19–20 do not recite a seed emulsion. The Examiner has not provided any explanation as to why the purported motivation, even if correct, would be beneficial in detecting a particle on a substrate. Because the cited references do not disclose or suggest the additional features recited in claims 19–20, or provide a proper motivation to combine, claims 19–20 are not obvious over the cited references for at least this reason.

Regarding claim 21, the Examiner states that it would have been obvious to select aniline and thiophene as monomers as a matter of obvious design choice, again citing *In re Leshin*. This rejection is improper for the same reasons the rejection of claims 14 and 15 are improper, and should be withdrawn.

Claim Rejections over Scheer, Ballas, and Asano.

Claim 3 stands rejected under 35 U.S.C. § 103(a) as unpatentable over Scheer in view of Ballas and further in view of Asano (JP 2003031542). Claim 3 is dependent on claim 1, and further provides, in relevant part, "the particle counter is capable of detecting particles on both sides of the substrate without unmounting the substrate." The Examiner relies on Asano for disclosing a particle counter that detects particles on both sides of a substrate. Without acquiescing to the Examiner's characterization of Asano, as discussed above, claim 1 is not obvious over Scheer and Ballas. Because claim 3 is dependent on claim 1, claim 1 is not obvious over Scheer, Ballas, and Asano for at least the same reasons as claim 1 is not obvious over Scheer and Ballas.

Moreover, the Examiner has provided no description of how the purported particle counter of Asano is combinable with the combination of Scheer and Ballas. Accordingly, the Examiner also has not provided the requisite expectation of success found in the cited references or known to one skilled in the art, and the rejection is improper for at least this reason.

Furthermore, the Examiner's motivation for combining Scheer with Ballas was to provide an improved enzyme assay. In adding Asano, the Examiner's motivation is high speed and accurate detection of particles on a wafer during wafer cleaning. The Examiner has provided no

explanation as to why a skilled artisan would combine Scheer and Ballas to create an improved enzyme assay, then realize that the resulting assay is useful in wafer cleaning.

Claim Rejections over Scheer, Ballas, and Tullis.

Claims 4–6 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Scheer in view of Ballas and further in view of Tullis (U.S. Patent No. 5,144,524). Claims 4–6 are dependent on claim 1. The Examiner states, without citation, that Tullis discloses an optical particle counter that detects absorbance, fluorescence, reflectance, refractive index, or polarization. Without acquiescing to the Examiner's characterization of Tullis, claims 4–6 are dependent on claim 1, which as discussed above, is not obvious over Scheer and Ballas. Accordingly, claims 4–6 are not obvious over Scheer, Ballas, and Tullis for at least the same reasons.

Moreover, Tullis appears to be directed to a system for calibrating a scanner that *minimizes particle reflectance.* Tullis at Abstract ("*Particles which contaminate the antireflectance film on the substrate do not scatter sufficient light to be detected by the surface analysis scanner detectors* and thus do not interfere with the calibration of the scanner. ... . A surface analysis scanner system may also include *methods, utilizing antireflectance films, for reducing the amount of scanned light scattered by particles on a scanner system surface.*"). Accordingly, Tullis appears to ***teach away*** from detecting a particle on a substrate, and consequently, claims 4–6 are not obvious over the cited combination for at least this reason.

With respect to motivation, the Examiner states that one would have been motivated "for the purpose of detecting and analyzing particles on the silicon wafers with parameters as sensitivity, counting accuracy, uniformity, dynamic range, spatial resolution and stability." As with Asano, the Examiner appears to have completely abandoned the motivation for combining Scheer with Ballas: an improved enzyme assay. Again, the Examiner provides no explanation as to why one skilled in the art would be motivated to use an improved enzyme assay to detect and analyze particles on silicon wafers. Consequently, Applicant submits that the Examiner has provided no proper motivation to combine, and requests that the rejection be withdrawn.

Claim Rejections over Scheer, Ballas, and Yoshimura.

Claims 11–13 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Scheer in view of Ballas and further in view of Yoshimura (U.S. Patent No. 5,194,548). Claims 11 and 13 are dependent on claim 1. The Examiner states that Yoshimura discloses a plurality of monomers

contacted with the substrate simultaneously or sequentially. The Examiner refers to column 7, lines 45–63 and column 11, lines 23–45, which appear to disclose a nonlinear optical material synthesized in a photochemical gas phase process. The Examiner's motivation to combine is to improve the nonlinear optical material formed in molecular beam deposition or molecular beam epitaxy. Nothing in Yoshimura, Scheer, or Ballas would appear to provide a proper motivation to combine these references, and the Examiner provides none. Neither Scheer nor Ballas has any disclosure of molecular beam epitaxy, molecular beam deposition, or nonlinear optical materials. Yoshimura does not appear to disclose detecting a particle on a substrate or a particle that catalyzes polymerization. Nothing connects these references other than hindsight reconstruction of the claim by the Examiner. Accordingly, Applicants submit that the rejection is improper and request withdrawal of the same.

The Examiner also has provided no evidence of any kind that the monomers disclosed in Yoshimura have any applicability in the detection of a particle on a surface. Accordingly, absent any reasonable expectation of success, claims 11 and 13 are patentable over the cited combination for at least this reason.

Moreover, because claims 11 and 13 are dependent on claim 1, and claim 1 is not obvious over Scheer and Ballas, claims 11 and 13 are also not obvious over Scheer, Ballas, and Yoshimura for at least the same reasons.

Claim Rejections over Scheer, Ballas, and Hahn.

Claims 22–23 stand rejected under 35 U.S.C. § 103(a) as unpatentable over Scheer in view of Ballas and further in view of Hahn (U.S. Patent No. 4,170,663). Claims 22 and 23 are dependent on claim 1. The Examiner states that Hahn discloses benzyl bromide as a free radical initiator. Hahn does not appear to disclose benzyl bromide in any capacity. Because the cited references do not disclose or suggest every feature recited in the claims, claim 23 is not obvious over the cited references for at least this reason.

Hahn appears to be directed to a method for producing a low gloss coating by a three stage process comprising: exposure to ionizing radiation in the presence of a cure inhibiting amount of oxygen; exposure to ultraviolet radiation in the absence of a cure inhibiting amount of oxygen; and exposure to ionizing radiation. The Examiner's stated motivation to combine Hahn is to produce a low gloss, burnish resistant, radiation cured material. Hahn does not appear to

disclose or suggest detecting a particle on a substrate. Neither Scheer nor Ballas appear to have any disclosure or suggestion that a low gloss, burnish resistant, radiation cured material would, in any way, be desirable for any purpose. Accordingly, the Examiner's motivation is again deficient and the rejection is improper. Applicant requests withdrawal of the same.

Moreover, because claims 22–23 are dependent on claim 1. Because claim 1 is not obvious over Scheer and Ballas, claims 22–23 are also not obvious over Scheer, Ballas, and Hahn for at least the same reasons.

Hahn is also not analogous art. Hahn appears to be directed to paints and/or finish coatings, and does not appear to be related in any way to the fields of the the primary or secondary references, nor to the claimed context of particle detection on a substrate. Accordingly, the rejection is improper, and claims 22 and 23 are patentable over the cited references for at least this reason.

As discussed above, the Examiner's rejections are based on motivations to combine that appear to be invariably unrelated to the pending claims and/or other alleged motivations to combine. Accordingly, the Examiner appears to be engaged in a completely post-hoc reconstruction of the claim elements. "If identification of each claimed element in the prior art were sufficient to negate patentability, very few patents would ever issue. Furthermore, rejecting patents solely by finding prior art corollaries for the claimed elements would permit an examiner to use the claimed invention itself as a blueprint for piecing together elements in the prior art to defeat the patentability of the claimed invention." *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457–58 (Fed. Cir. 1998). Applicant notes that in the Examiner's Response to Arguments, the Examiner's response to Applicants previous observation that the Examiner's conclusion of obviousness appeared to be based on hindsight reconstruction was entirely non-substantive. Instead, the Examiner's response consisted simply of twice setting forth a portion of M.P.E.P. 2145(X)(A). Applicant notes that it is difficult to respond to this type of response.

For the reasons provided above, Applicant submits that all rejections have been overcome or are improper. If the Examiner believes that any remaining issues could be resolved in a conversation with the Applicants attorney, the Examiner is invited to contact the undersigned.

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Please charge any additional fees, including any fees for additional extension of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

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